Scientific Computing Assignment 1

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Q1)

1. In pi-mystery is taken where x is between ‘0’ and ‘1’. In the code “**step**” variable denotes the increment of x. In the code step =. Reason why we get the value of π is where step is is almost equal to

So by multiplying the sum by 4 we can get π.

1. Sd

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # Trials | SP/ DP |  | CPU sequential (curand) | CPU Parallel [curand] (T=# threads) | | | GPU | | | |
| T=2 | T=4 | T=8 | Mystery | Myrand | Curand | Curand-Thrust |
| 224 | SP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |
| DP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |
| 226 | SP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |
| DP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |
| 228 | SP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |
| DP | PI estimate |  |  |  |  |  |  |  |  |
| Error |  |  |  |  |  |  |  |  |
| Time |  |  |  |  |  |  |  |  |

Q2)

|  |  |  |  |  |  |  |
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| N | SP/ DP | CPU sequential (curand) | CPU Parallel [curand] (T=# threads) | | | GPU |
| T=2 | T=4 | T=8 |
| 108 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |
| 5x108 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |
| 109 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |

Q3)

|  |  |  |  |  |  |  |
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| N | SP/ DP | CPU sequential (curand) | CPU Parallel [curand] (T=# threads) | | | GPU |
| T=2 | T=4 | T=8 |
| 108 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |
| 5x108 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |
| 109 | SP |  |  |  |  |  |
| DP |  |  |  |  |  |